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Observation of the Transit of Venus 1882, *December* 6, *made at Fernhill, Wootton Bridge, Isle of Wight.* By Frederick Brodie.

So few persons in England seem to have had a view of this Transit, that I send a few remarks on the little that was visible here.

The whole period of the Transit visible in these latitudes was more or less obscured by clouds. The external contact was not seen, but at 2^h 3^m L.M.T. the planet was seen partly on the Sun's disk. The internal contact took place between 19^h 18^m and 19^h 18^m 6^s L.S.T. It was quite impossible to obtain any exact observation, as the great amount of aqueous vapour that was passing made the definition of the disks of planet and Sun of maximum unsteadiness. It could hardly be worse. I was using a power of 80 on the 8½ in. Equatorial, and generally only with a dark glass used as a moonshade, so seldom was the Sun free from cloud more or less.

When the planet's disk was about half way on the Sun's periphery, I got a short view, showing me with great clearness the twilight caused by the atmosphere of *Venus* all round that portion of her disk as yet off the Sun. It was a soft white light, assuming a ruddy hue next to the edge of the planet's disk. The effect of it was beautiful, and this continued nearly until the time of internal contact. It was at once evident that the extent of the atmosphere round the planet was infinitely greater than that accorded to our own planet. This was also clearly seen in a telescope by Merz of 3 in. aperture that my son was using.

After the planet was on the Sun's disk about an hour, the southern half of the planet's disk was fringed with an intense blue colour, and the northern half of the disk with a reddish orange. This effect was also clearly seen in the 3 in. Merz telescope. This was not due to the position of the planet in the field of the eyepiece, as is often the case in a lesser degree, but was, apparently on account of the low elevation, in a bad state of atmosphere. The longest continuous view I had was not more than two or three minutes on the one occasion of internal contact; at other times I only had glimpses of much shorter duration.

The observation was made with an Equatorial of 8½-inch aperture by Cooke & Sons.

Observations of the Solar Spots of November 1882.

By Frederick Brodie.

The large solar spots, concerning which notes were given by Messrs. Howlett and Pratt in the *Monthly Notices* for May last, have, I think, been surpassed in size by those of November.

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The huge crater, or *penumbra*, in which these spots, or *umbræ*, were situated, was the largest that I remember to have seen, and far larger than that which occurred in October 1865, which was mentioned then in the *Notices* of the R.A.S. by the Rev. F. Howlett and myself, and which was especially interesting on account of the extreme rapidity of the photospheric changes.

November 15.—The spot now visible on the Sun is an immense size. The *penumbra* is of an irregular oval shape, and measures across its major axis 128″, equal to 56,000 miles; while its minor axis measures 116″, or 51,000 miles. The *umbra* is most irregular in shape, measuring in its greatest length 39,000 miles, and its greatest breadth 23,000 miles. The changes in its outline are very rapid, so much so that it is most difficult to sketch, in addition to which the low altitude of the Sun and correspondingly bad definition render it increasingly difficult. The *umbra* has six large and long promontories stretching more or less across it, something like the fingers of the hand, only that they are curvilinear. The rugged glacier-like form of the sides of the *penumbra* is most remarkable, but the atmosphere is too bad to make measurements of details.

Clouds prevented further observation for some days.

November 19.—The great spot has greatly altered in its details. There is now a nest of *umbræ* within the one *penumbra*, which has not materially altered in shape, though it is enlarged, its greater length now being 64,000 miles, and its breadth 52,000 miles. The extreme activity of the photosphere continues, and is far greater than what I have ever noticed before. Within three hours two of the larger *umbræ* had joined themselves together, and had again separated. The channel of communication between them that was opened and again filled up was roughly estimated at about 2,000 miles wide and 8,000 or 9,000 miles long.

The extremely bad definition and the unsteadiness of atmosphere render it impossible to observe or measure the small details, while the excessively cloudy weather prevents anything more than occasional views of the Sun, otherwise this spot would have formed a study of surpassing interest.

The instrument employed was an Equatorial of 8½ in. aperture by Cooke & Sons.

The Spectrum of the Great Sun-spot of 1882, *November* 12–25, *observed at the Royal Observatory, Greenwich.*

(*Communicated by the Astronomer Royal.*)

The spectrum of this remarkable spot was examined by means of the "half-prism" spectroscope on three occasions, viz., Nov. 18, 20, and 21. The weather in each instance was very unfavourable for a satisfactory examination, being misty and cloudy on Nov. 18 and 20, and on Nov. 21 the Sun was only visible

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